CLAIMS

I claim:

1. An electronic system for locating an object comprising:

a monitoring unit;

a tracked unit placed on said object receiving a monitor direct sequence spread spectrum (MDSSS) signal from said monitoring unit and transmits a tracked direct sequence spread spectrum (TDSSS) signal to said monitoring unit; and

a first phase detector placed on said monitor unit to compare a first frequency component of said tracked direct sequence spread spectrum signal to a monitor first frequency component creating a first phase difference utilized for a coarse accuracy determination of a object ranging distance relative to said monitor unit.

2. An electronic system as recited in Claim 1, further comprising:

a second phase detector included within said monitor unit that compares a tracking second frequency component of said TDSSS signal with a monitor second frequency component to create a second phase difference; and

a first detector phase error output determines number of repeated frequency periods of said second frequency component of said TDSSS signal for a medium accuracy determination of said object ranging distance relative to said monitor unit.

3. An electronic system as recited in Claim 2, further comprising:

a third phase detector comparing a third frequency of said TDSSS signal with a monitor third frequency component to create a third phase difference; and

an output of second phase detector determines number of repeated frequency cycles of said tracked third frequency of said TDSSS signal for fine accuracy determination of said object ranging distance relative to said monitor unit.

4. An electronic system as recited in Claim 1, wherein said first frequency of said TDSSS is a repetition rate of said tracked pseudo-random noise sequence and said first monitor frequency component is a repetition rate of said monitor pseudo-random noise sequence.

5. An electronic system as recited in Claim 1, wherein said second frequency component of said TDSSS signal is a chipping frequency of said tracked pseudo-random sequence and said second frequency component of said MDSSS signal is a chipping frequency of said monitor pseudo-random sequence.

6. An electronic system as recited in Claim 1, wherein said third frequency component of said TDSSS signal is a carrier frequency and said third frequency component of said MDSSS is a carrier frequency.

7. An electronic system as recited in Claim 1, wherein said monitor unit comprises a first monitor antenna disposed on said monitor unit and a second monitor antenna disposed on said monitor unit, which said first monitor antenna is cross-polarized relative to said second monitor antenna for measuring said object ranging distance and relative angle from said monitor unit.

8. An electronic system as recited in Claim 1, wherein said second frequency component of said TDSSS signal is a pseudo-random noise sequence input into a first shift register and a second shift register, creating said first phase difference between said second frequency component of said TDSSS signal and said second frequency component of said MDSSS signal.

9. An electronic system as recited in Claim 1, wherein said tracked unit receives a monitor carrier frequency from said monitor unit, wherein said tracked unit includes a phase lock loop that locks said MDSSS signal with said TDSSS signal.

10. An electronic system as recited in Claim 1, wherein said monitor unit further comprises a monitor compass which displays location of said tracked unit within several concentric rings to provide a visual display for a user of said object ranging distance.

11. An electronic system as recited in Claim 1, wherein said monitor unit further comprises a monitor compass which displays said object ranging distance of said tracked unit relative to said monitor unit, and a user selects one zone from several concentric rings of coverage.

12. An electronic system for locating an object comprising:

a monitoring unit;

a tracked unit placed on said object receiving a monitor direct sequence spread spectrum (MDSSS) signal from said monitoring unit and transmits a tracked direct sequence spread spectrum (TDSSS) signal to said monitoring unit;

a first phase detector placed on said monitor unit to compare a first frequency component of said tracked direct sequence spectrum signal to a monitor first frequency component creating a first phase difference utilized for a coarse accuracy determination of said object distance ranging relative to said monitor unit;

a second phase detector included within said monitor unit that compares a second frequency component of said tracked direct sequence spread spectrum signal with a monitor second frequency component to create a second phase difference; and

a first detector phase error output determines number of repeated frequency periods of said second frequency component for a medium accuracy determination of range relative to monitor unit of said object range,

wherein said first frequency component of said TDSSS signal is a repetition rate of said tracked pseudo-random noise sequence and

wherein said second frequency component of said TDSSS signal is chipping frequency of said tracked pseudo-random sequence.

13. An electronic system as recited in Claim 12, further comprising:

a third phase detector comparing a third frequency of said TDSSS signal with a third monitor frequency component to create a third phase difference; and

an output of second phase detector determines number of repeated frequency cycles of said third frequency component of said TDSSS signal for fine accuracy determination of an object ranging distance between said monitor unit and tracked unit.

14. An electronic system as recited in Claim 12, wherein said third frequency component of said TDSSS signal is a carrier frequency and said third frequency component of said MDSSS signal is a carrier frequency.

15. An electronic system as recited in Claim 12, wherein said monitor unit comprises a first monitor antenna placed on said monitor unit and a second monitor antenna placed on said monitor unit, which said first monitor antenna is cross-polarized relative to said second monitor antenna for measuring said object ranging distance and relative angle from said monitor unit.

16. An electronic system as recited in Claim 12, wherein said second frequency component of said TDSSS signal is a pseudo-random noise sequence input into a first shift register circuit and a second shift register circuit placed with said monitor unit, creating said first phase difference between said second frequency component of said TDSSS signal and a second frequency component of said MDSSS signal, which is a pseudo-random noise sequence.

17. An electronic system as recited in Claim 12, wherein said monitor unit further comprises a monitor compass which displays object ranging distance between said tracked unit and said monitor unit, wherein said a user selects one zone from several concentric rings of coverage for tracking said tracked unit.

18. A method for detecting the range of an object comprising:

placing a tracked unit on said object;

transmitting a monitor direct sequence spread spectrum (MDSSS) signal from a monitoring unit;

receiving said MDSSS signal at said tracked unit;

transmitting from said tracked unit a tracked direct sequence spread spectrum (TDSSS) signal to said monitoring unit;

comparing a first frequency component of said TDSSS signal to a first frequency component of said MDSSS signal within a first phase detector; and

outputting a first phase shift for coarse accuracy determination of said object range relative to said monitor unit.

19. The method of Claim 18 further comprising the steps of:

comparing a second frequency of said TDSSS signal to a second frequency component of said MDSSS signal within a second phase detector;

outputting a second phase shift;

determining the number of repeated frequency periods of said second frequency of said TDSSS signal.